

# DRAM Buried Strap Process With Silicon Carbide

## Abstract

In the process of forming a trench capacitor, the conductive strap connecting the center electrode of the capacitor with a circuit element in the substrate, such as the pass transistor of a DRAM cell, is separated from the crystalline substrate material by a barrier layer of silicon carbide formed during the process of etching the material within the trench, such as an oxide collar, using a reactive ion etch process with an etchant gas that contains carbon, such as  $C_4F_8$ .